



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,645	07/27/2006	Andrea Scarpa	NL040019US1	2711

65913 7590 03/10/2008
NXP, B.V.
NXP INTELLECTUAL PROPERTY DEPARTMENT
M/S41-SJ
1109 MCKAY DRIVE
SAN JOSE, CA 95131

EXAMINER

HOLLINGTON, JERMELE M

ART UNIT	PAPER NUMBER
----------	--------------

2829

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/10/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/587,645	Applicant(s) SCARPA ET AL.	
	Examiner Jermele M. Hollington	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Munari et al (“A Test Pattern for Three-Dimensional Latch-up Analysis”).

Regarding claims 1 and 8, Munari et al disclose a test module for testing the susceptibility of an integrated circuit design to latch-up, the test module comprising a plurality of test blocks (source-measure units), connected in parallel, each test block including an injector block (injecting device) for applying a stress current or voltage to the respective test block (see page 106, column 2, last paragraph – page 107, column 1, 1st paragraph), and a plurality of sensor blocks (parasitic devices) located at successively increasing distances from the respective injector block (injecting device), each sensor block (parasitic devices) including a PNPN latch-up test structure (see page 104, 1st column, 2nd & 3rd paragraph and page 106, 2nd column, 1st paragraph).

Regarding claim 2, Munari et al disclose each test block (source-measure units) is connected to a bondpad, said stress current or voltage being applied to said injector via said bondpad (see entire page 107 for details).

Art Unit: 2829

Regarding claim 3, Munari et al disclose said injector blocks (injecting device) are connected between first and second supply lines (see page 104, 2nd column – page 105, 1st column).

Regarding claim 4, Munari et al disclose contacts of said sensor blocks are connected between third and fourth supply lines, different from said first and second supply lines (see page 106, 2nd column – page 107, 1st column).

Regarding claim 5, Munari et al disclose each PNP latch-up structure comprises an N+ and a P+ hot-active (see page 106 column 2, 1st paragraph), which hot-actives are connected to respective probe sensor lines (see page 106 column 2, 1st paragraph).

Regarding claim 6, Munari et al disclose heating means (rings) is provided in respect of said PNP latch-up test structures (see page 105, column 2, 1st paragraph).

Regarding claim 7, Munari et al disclose said heating means (rings) comprise polysilicon rings (rings) located around respective PNP latch-up test structures (see page 105, column 2, 1st paragraph).

Regarding claim 9, Munari et al disclose disconnecting said sensor blocks (parasitic devices) during application of said stress current or voltage to one or more of said injector blocks (injecting devices), and obtaining current measurements at said injector blocks (injecting devices) to determine the susceptibility thereof to latch-up (see page 105-page 107 for details).

Regarding claim 10, Munari et al disclose an injector block (injecting device) or a sensor block (parasitic devices) is determined to be susceptible to latch-up if a current measurement thereat exceeds a predetermined threshold (see entire page 103).

Art Unit: 2829

Regarding claim 11, Munari et al disclose sequential current measurements are obtained at each PNP latch-up test structure of a sensor block (see page 106, 2nd column – page 107, 1st column).

Regarding claim 12, Munari et al disclose each injector block (injecting device) and each sensor block (parasitic devices) can be independently biased.

Regarding claim 13, Munari et al disclose each PNP latch-up test structure can be biased independently (see page 106 column 2, 1st paragraph).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:00 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2829

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jermele M. Hollington/
Primary Examiner
Art Unit 2829

/J. M. H./
February 26, 2008